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Upcoming Events

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Capitol Hill

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EMSSAB Meeting
Oak Ridge, TN

August 2016

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Third Annual
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BOISE, Idaho (AP) — Federal officials announced Friday they won't meet a September deadline to start converting 900,000 gallons of high-level radioactive liquid waste to a solid form at the Idaho National Laboratory in eastern Idaho.

Idaho Cleanup Project Deputy Manager Jack Zimmerman of the U.S. Department of Energy said continuing problems at a $600 million facility built to handle the liquid waste are to blame.

He said the Integrated Waste Treatment Unit has successfully shown it can convert the liquid waste into solid form, "but we have not been able to achieve the stable operation we were looking for."

The department initially had a 2012 deadline based on a 1995 agreement with Idaho, but that deadline has been extended multiple times. Zimmerman said the latest missed deadline means the department faces potential fines from the state that could reach $6,000 a day.

Perhaps more significantly, it's also a blow to the federal agency's desire to bring in research shipments of spent commercial nuclear fuel to the lab, one of 17 Department of Energy labs in the nation and the primary lab for nuclear research.

One shipment has already been canceled because of missed deadlines, an economic blow that officials say means the loss of millions of dollars a year to the area.

Idaho Attorney General Lawrence Wasden has refused to sign a waiver to the 1995 agreement allowing the shipments until receiving some kind of assurance that the 900,000 gallons of liquid waste currently stored underground at the 890-square-mile nuclear facility will be converted to solid form.

Negotiations between Wasden and Department of Energy officials broke down last year.

A spokeswoman Friday said the attorney general's office had no comment on the missed deadline.

Natalie Clough, hazardous waste compliance manager with the Idaho Department of Environmental Quality, said state officials expected the federal agency to submit a new timeline in August.

"We do know that DOE and their contractors have been working diligently to address multiple issues that have occurred," Clough said. "However, we still expect compliance with the agreement that is in place."

The 1995 agreement hammered out by former Gov. Phil Batt followed a federal lawsuit between Idaho and the Department of Energy settled in Idaho's favor. That started when then-Gov. Cecil Andrus became concerned the eastern Idaho federal facility was becoming a nuclear waste repository.

Andrus, who remains involved in the state's nuclear debate, said he wasn't surprised by Friday's announcement and remains concerned about nuclear waste stored above the Lake Erie-sized Eastern Snake Plain Aquifer, which provides water for the region.

"The [Department of Energy] has a history of never meeting deadlines," he said. "Each day that passes with that high-level liquid waste below ground in 50-year-old tanks is a potential threat to the quality of the aquifer and therefore to the economy of the state of Idaho."

Zimmerman said two main problems exist in converting the liquid waste. The first is that a bark-like substance halfway between a liquid and solid has been forming during the conversion process and is causing problems.

Drilling project stokes nuclear fears
Argus Leader
May 23, 2016

LINK

There won't be any nuclear waste.

The organization behind a U.S. Department of Energy push for an ambitious deep drilling test project has made that promise dozens of times to Spink County residents over the past month.

Battelle, the Ohio-based research nonprofit contracting with the DOE for the $34 million project, says it's willing to sign a pledge to close the three mile-deep holes and never come back if the county approves the project.

It would pay third-party inspectors chosen by the county to guarantee the absence of nuclear material, representatives say. Any future nuclear waste storage plan boosted by its research is at least a decade and hundreds of miles away from the South Dakota drill site.

The contract between Battelle and the DOE specifies that the site can't be used for nuclear waste.

"These wells will not be designed to hold nuclear waste. Period," Battelle spokesman TR Massey said.

None of that matters. Opponents simply don't believe it.
"I have little doubt in my mind – if they're spending $34 million to get this, they're going to want to get rid of that nuclear waste," said Arvid Dills, a Brookings resident who attended one of Battelle's three public presentations last month.

The specter of nuclear waste disposal holes dotting the prairie near Redfield, worries about possible contamination of the groundwater residents rely on and a distrust of the federal government's intentions have some eastern South Dakotans organizing to stop the project before it starts.

“The science is good, but will they come back?” said Jamie Fisk, a retired biology teacher, former Air Force member and an active voice in a group called Citizens for a Non-Nuclear South Dakota.

Fisk understands the reason for the Battelle project, he said – the U.S. has nuclear waste from defense projects stored all over the country, and the options for safe, stable storage aren’t plentiful.

He also understands the value of the science training the site could offer for graduate students at the South Dakota School of Mines and Technology – an important selling point for Gov. Dennis Daugaard.

What Fisk doesn’t understand is why it needs to happen in farm country.

“This test, personally, needs to happen, but it needs to happen in a place where you have little population and where you’re not producing a lot of food off the land,” Fisk said.

Project rejected in North Dakota

The Deep Borehole Field Test involves combining a handful of drilling practices to do something that hasn’t been done before: Drill a wide-diameter hole three miles deep into solid granite to create a hole straight enough to lower canisters into.
“It can’t be off two inches here or three inches there, because the can won’t be able to slide down,” Massey said.

The possibility of using canisters for waste disposal has been studied in the past, but the passage of time and collapse of the Yucca Mountain project in 2011 opened the door to further study.

In order to test the technology, the DOE and Battelle identified several potential test sites across the U.S. The test would involve drilling a single hole with a narrow diameter, according to project manager Rod Osborne. If that drilling is successful, a

second, wider hole would follow. Each drilling process would take seven to nine months, he said.

“As we put together our proposal a year ago, the task at hand was to drill a test well,” Osborne said.

Along the way, the field test would identify other potentially useful information. If the Battelle team found temperatures of 300 degrees during its deep drill, that data could bolster future geothermal energy projects.

Once the holes are drilled and the testing is complete, the holes would be filled in permanently and the land would be restored, Osborne said.

The Spink County site would be the first of many similar test projects, he said. Spink County was an attractive site for several reasons: The stable geology, the availability and support from the South Dakota School of Mines and Technology and the RESPEC firm out of Rapid City among them.

Gov. Daugaard’s backing of the project as a way to boost the state’s standing as a leader in underground research helped, as well. The Sanford Underground Research Facility in Lead has given the state a leg up in that arena.

“I support the Deep Borehole project in South Dakota because it furthers our state’s leadership in underground research with no potential for that location to be used to store nuclear waste,” Daugaard said this year. “South Dakota is a recognized worldwide leader in this area, and I’m proud our state has the potential to continue this legacy of scientific innovation.”

Support in Spink County is not a given. The first community faced with the possibility of a borehole project quickly rejected Battelle. In March, Pierce County, North Dakota officials issued a moratorium on all deep borehole drilling before Battelle had applied for a single permit.

Many of the concerns now animating opponents in and around Spink County weighed heavily on the minds of Pierce County Commissioners.

In a letter announcing their decision, commissioners wrote that while they understand that the test wouldn't directly lead to storage, "ultimately … the DOE goal is to find disposal methods of, and locations for, radioactive waste."

Spink County opposition looms

In Spink County, the project would require a special exception permit, said County Equalization Director Kim Markley.

Battelle hasn't asked for a permit yet – which would be one of several it would need before moving forward – but getting one would require an application, a notice in three newspapers and an affirmative vote by a super-majority of the five commission members.

"They'd need four votes," Markley said.

Fisk says his group's most immediate concern with the project is the presence of aquifers. The project would drill through two aquifers and continue for several thousand feet past them. Some residents have talked of possible radon leakage into the aquifers.

"We're trying to stop the drilling because of the possible damage to the aquifer," Fisk said. "If they do this test and stir something up down there that's never been stirred up before, what's it going to do to that water?"

Fisk wants South Dakotans to understand the risks associated with the project, even if they live far from the holes.

Osborne said the aquifers shouldn't be an issue. Oil and gas companies drill through aquifers frequently, sealing the water off from drilling with steel.

“Once you get into that granite, that steel pipe seals it off,” Osborne said.

Massey said the company would agree to several conditions to insure the residents that no nuclear waste would appear in the county as part of any permit from commissioners.

As further reassurance, he cited the contract with the DOE, which specifies that no nuclear waste can be stored on the site. He also said that the presence of a population base and a large aquifer make the site unsuitable for waste storage, anyway.

The geology is perfect for an initial test, he said, but the site isn’t ideal for storage.

“We wanted the best opportunity, the highest chance of success, so we looked at the place with the best possible geology,” Massey said. “If you’re looking for a site to actually store nuclear waste, there would be a lot more selection criteria.”

The DOE has adopted a “consent-based siting” approach to waste storage, saying that no community will be forced to accept storage.

"If DOE decides to pursue deep borehole disposal of radioactive waste we are committed to choosing potential disposal sites – whether in South Dakota or anywhere else – through a consent-based process that would involve local and state governments and any affected Tribes proactively reaching out to DOE and expressing interest in hosting the waste material," said Andrew Griffith of the DOE.

Gov. Daugaard has said that any future radioactive waste storage would need to see a vote of the people of South Dakota.

The promises haven’t assuaged the concerns of all the residents, however. Former Governor and Spink County resident Harvey Wollman spoke out against the project at a meeting last month, and Rep. Kristi Noem, R-S.D., has stated publicly that she’s opposed to the drill test.

A spokesman for Sen. John Thune, R-S.D., said the senator understands the residents' concerns, that Spink County needs to decide, and that he opposes any storage of nuclear waste in-state.

Senator Mike Rounds, R-S.D., has offered support, but also says Spink County needs to decide.

"Like Governor Daugaard, I believe the project presents a unique learning opportunity for SDSM&T students and furthers our state's leadership in scientific underground research," Rounds said. "Additionally, assurances have been made that no nuclear waste will be stored at the site. It is now up to the citizens of Spink County to determine if it is a good opportunity for their county. I will support the outcome of their decision."

Fisk hopes commissioners side with his group and send the research project somewhere else. He doesn't trust the assurances from the company or the DOE, given the enormity of the waste storage issues facing the U.S.

"What we're hoping is that two commissioners will step forward and say, 'No,'" Fisk said.

New opinion sought on report impacting Centrifuge plant
Chillcothe Gazette
May 21, 2016
LINK

PIKETON — When it comes to whether the United States can meet its long-term national security needs for tritium without Piketon's American Centrifuge Plant, U.S. Rep. Brand Wenstrup wants a second opinion.

With the uranium enrichment demonstration facility involved in the lengthy process of ramping down operations following the Department of Energy's decision to de-fund the project, Wenstrup is again questioning the findings of a report that was

used as part of the justification for the Centrifuge's shut down. DOE, in announcing the de-funding decision last September, said the agency had gotten what it could out of the years of testing the new centrifuge technology in Piketon, but that its continued development would be shifted to a facility in Oak Ridge, Tennessee.

That decision was, in part, made with the help of a DOE report, "Tritium and Enriched Uranium Management Plan Through 2060," that was released during the month after the de-funding decision was announced. The report provides an estimate of how long the U.S. will continue to be able to produce tritium for its national security needs — including its naval fleet and NASA missions, among others — using various methods of getting necessary highly enriching uranium in order to produce it. It projects that by doing so, tritium production could be maintained until between 2038 and 2041, and that new sources of highly enriched uranium would be required by 2060.

Wenstrup said he has concerns with the findings in the report, the most notable being the finding that tritium production can be maintained through at least 2038 — nearly 10 years later than in previous estimates. The 2nd District congressman was able to get a provision included in the recently passed House version of the National Defense Authorization Act that would require the Government Accountability Office to conduct an independent review of the DOE report and determine both the accuracy of what it contains and to look at whether actions it proposed were appropriate.

"In the face of increasing threats around the world, we cannot afford to shortchange our military on vital resources like tritium and rely on stockpiles or foreign sources for our defense capabilities," Wenstrup said. "This GAO report will ensure that the DOE is pursuing policies that are in the best interest of our national security."

Under terms of the proposal, the GAO would have to submit the findings from its review to the House and Senate Armed Services Committees by Jan. 31, 2017.

The report was a bone of contention for lawmakers when the de-funding decision was handed down in September, with none in the Ohio delegation having seen it

until about three weeks after the decision was made. At the time, they noted the report indicated the centrifuge technology was the most cost-effective and least risky of six options suggested for producing the highly enriched uranium needed.

The National Defense Authorization Act passed the House on Wednesday, and House members will now work with members of the Senate to create a final version of the bill.

Meanwhile, Centrus Energy, which operates the American Centrifuge Plant, earlier this month announced its first quarter earnings showing a net loss of $14.6 million on revenue of $90 million and a cash balance of $180 million as of March 31. The costs for demobilization at the American Centrifuge for the quarter reached $12 million.

In the earnings report, the company said it expects to continue making payments for workforce reductions through early 2017 and that it expects decontamination and decommissioning efforts will continue into the first quarter of 2017. In a conference call with investors, Stephen Greene, senior vice president, chief financial officer and treasurer, said that while demobilization of the site is ongoing, the company is "preserving our options for future use."

Mobile lab to detect Hanford chemical vapors being tested
Tri-City Herald
May 22, 2016
LINK

New technology is being tested at the Hanford tank farms that might play a role in learning more about chemical vapors at the nuclear reservation and help better protect workers.

RJ Lee Group has developed a commercially available mobile laboratory, equipping a van with scientific instrumentation. A mass spectrometer in the van can detect

chemicals that quickly evaporate into the air, even if they make up just a few parts per trillion of a sample.

Four one-week tests of the mobile laboratory are planned over two months before Department of Energy contractor Washington River Protection Solutions decides whether to add it to its chemical vapor detection and monitoring program.

The first week of testing has just concluded. Workers may have seen the white van on site, parking in or near tank farms, and then extending a mast to suck in some air to see what its instrumentation can detect.

Pacific Northwest National Laboratory had previously done some laboratory testing on the equipment before field testing began.

The mobile lab was one of the technologies picked for further investigation following a technology exchange workshop the tank farm contractor held in February 2015.

Washington River Protection Solutions held discussions with businesses, universities and national labs on vapor conditions at the Hanford tank farms after an independent assessment concluded that brief, intense vapor releases could be causing respiratory symptoms in workers.

Now workers exit the tank farms or other nearby areas if at least two of them smell an odor or if one worker develops symptoms that could be caused by chemical vapors from the waste held in underground tanks. Symptoms often include coughing, shortness of breath and dizziness.

This spring, nearly 50 Hanford workers have been given medical evaluations and cleared to return to work after possible exposure to chemical vapors.

But Washington River Protection Solutions often reports that checks after the events find chemicals only at levels well below the regulatory standards set to keep workers safe.

The mobile lab offers three potential benefits — real-time analysis, detailed chemical analysis and low detection limits, said Karthik Subramanian, manager of the contractor's chief technology office.

The RJ Lee mobile laboratory can detect three-quarters of the 59 chemicals the DOE contractor believes are of potential concern. They have been identified as chemicals that can be present in the head space of underground waste-storage tanks that could cause health problems, according to Washington River Protection Solutions.

It identifies them in near real time in the field, rather than requiring samples to be collected and shipped off to a lab for analysis.

Potentially, the lab could be used as a "storm chaser," traveling to suspected plumes to track and sample them. It also could be based at the filters where underground tanks are ventilated to determine what is being released into the air.

It also could collect data that would be used following suspected vapor events to sort out what chemical vapors may not be associated with tank waste, such as exhaust from cars or diesel generators.

The testing being conducted is looking at the type and concentrations of chemicals it is capable of finding and identifying at the Hanford tank farms and how it could be integrated with technology already being used at the tank farms to detect and monitor chemical vapors, Subramanian said.

Washington River Protection Solutions is preparing to hold another technology exchange meeting in July, this one looking at how to capture, destroy or otherwise eliminate chemical vapors.

Demolition moves ahead furiously at K-27; preparations underway for other Cold War facilities
Knox News Sentinnel

May 23, 2016
LINK

OAK RIDGE — The post-Cold War cleanup is proceeding at a furious pace at an Oak Ridge site once home to the nation's largest uranium-enrichment complex.

With K-27, the last of five gaseous diffusion plants, coming down quicker than expected and likely to be demolished before the year-end target date, the U.S. Department of Energy has started making preparations to tear down a bunch of other old buildings that once supported the nuclear program.

URS-CH2M Oak Ridge, DOE's cleanup manager, has taken advantage of favorable weather conditions to accelerate the demolition of K-27, which ceased operations in 1964. The four-story, 383,000-square foot building is highly contaminated and equally deteriorated.

A couple of billion dollars has already been spent on cleanup of the former uranium processing complex, with the biggest price tag associated with tearing down K-25 — the original uranium-enrichment plant that was a mile long in the shape of a U. It took much longer to tear down K-25 than it did to construct it during the World War II Manhattan Project, when it was the world's largest building under one roof.

Deactivating and demolishing K-27, its sister facility, is expected to cost about $292 million, and bringing it to the ground will be a major accomplishment, perhaps by late summer.

But a number of surrounding buildings, known collectively as the Poplar Creek Facilities, will pose their own challenges.

Some of these smaller buildings date back to the 1940s, performing missions that supported the processing of gaseous uranium hexafluoride to separate the fissionable U-235 isotope needed for weapons and reactors.

All told, there are 10 "significant" buildings that need to be torn down, along with "tie lines" that once connected the various operations.

Ben Williams, a spokesman at DOE's Office of Environmental Management in Oak Ridge, said the estimated cost of demolishing the Poplar Creek Facilities is about $74 million.
Most of the demolition debris will be sent to an Oak Ridge landfill that is specially designated for hazardous and radioactive materials generated by DOE's cleanup projects.

However, a "small portion" will likely be shipped off-site because of the levels of radioactive uranium or technetium, Williams said. He didn't specify the site, but similar wastes have been sent to DOE's Nevada National Security Site in the past.

Anne Smith, a spokeswoman for UCOR, said the old facilities are highly deteriorated.

"The Poplar Creek work is ongoing, and building demolition will take place through the end of the UCOR contract in 2020," she said.

The facilities are located north and west of K-27 and were originally build to support activities at K-27 and the former K-29 plant, which has already been demolished and cleaned up.
Here's a description of the Poplar Creek Facilities:

K-131 — It was built in 1945 to purify the uranium-hexafluoride feed to K-27. The building has five floors, including a basement and "penthouse." The K-131 purification process was relocated to another facility in 1954, according to UCOR. The building was operated as a feed facility from 1948-1955 and then "repurposed" in 1956 as a maintenance shop and a valve repair shop. It was shut down in 1985.

K-631 — This two-story building in the shape of a cross was constructed in 1945 and operated until 1962 as a "tails" withdrawal facility. It extracted process gas depleted of fissionable uranium isotopes. K-631 was converted to a fluorine-treatment facility in 1970, and it was shut down in 1985.

K-633 — This steel-framed, asbestos-paneled building was constructed in 1954 and includes two high bays and several "attached" rooms. It was used as a test facility for process gas equipment. K-633 was shut down in 1985, when gaseous diffusion operations at the Oak Ridge site were halted.

K-1232 — The two-story building, along with auxiliary support facilities, was built in 1976 and used for chemical recovery operations for nonfissile materials. It was modified in 1983 for use in neutralizing and treating waste products from the Y-12 nuclear weapons plant.

K-832 — This building was used as a recirculating water pump house. It has a concrete frame and concrete exterior walls, as well as a substructure with two concrete channels about 30 feet wide and 20 feet deep. It was shut down in 1985.

K-832-H-Cooling Tower — Operations began in 1945, but the original 14-cell tower was replaced in 1985 by a five-cell tower. The old cells were demolished at that time, and the new ones only operated a short time.

K-1203 — This facility housed the plant's sanitary sewage treatment. It consisted of a biological treatment system, lift stations, sedimentation basins, filtration and processing of sludges, according to UCOR. It was shut down in 2008.
K1314-G, H and J — These facilities were used for refurbishment of cylinders that stored uranium hexafluoride.

The complex consisted of three 40 foot-by-80 foot metal buildings with HEPA ventilation systems attached. The three buildings contained "sand blasting and painting processes" that were used to refurbish the containers.